

Introduction to Ordinal Science

Our Expertise

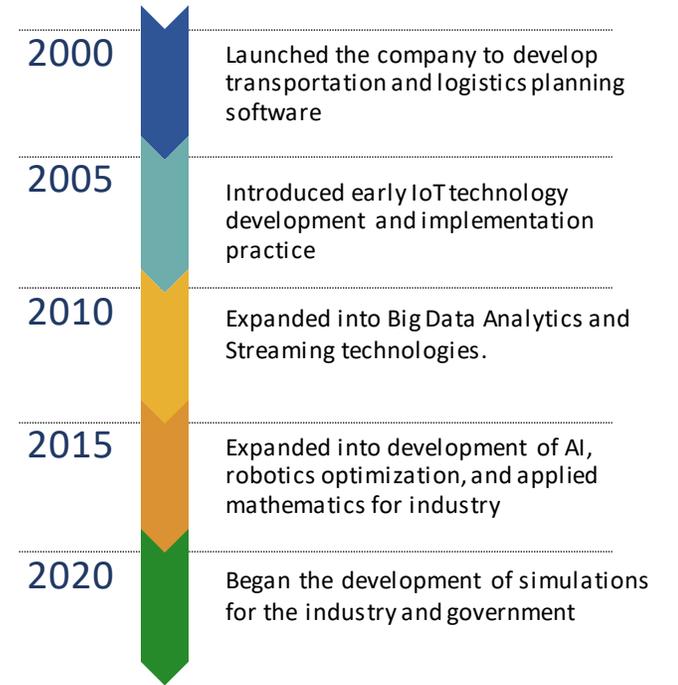
- 1 Data Science: predictive modeling, machine learning, machine vision
- 2 Business Simulations: enterprise digital twins for complex scenario testing
- 3 IoT: data gathering, inline cleaning and correction, high volume processing
- 4 Research: early technology research and development, academic to industrial applications

Client Verticals



Who We Are

We are a team of business professionals, applied mathematicians, and physicists that brings academic advances to practical business use cases.



Ordinal Science focuses on the industry

Data Science Applications

Data Science and AI technologies can harvest higher profits from the existing operations, identify new revenue streams, deepen the knowledge of and improve complex processes, optimize operations, and glean insight that is beyond the basic analytics.

Analytics. Harvest knowledge from big data: identify buying patterns and key buying triggers, capture anomalies in operations and equipment, explore trends in customer behavior, supplier performance, and inventory movement.

Prediction. Build reliable models predictive of a future behavior: demand and supply fluctuations, product performance, inventory needs, regional anomalies, maintenance requirements, schedule compliance and disruptions, price movements.

Optimization. Discover available efficiencies in the existing business: improve production schedules, maximize equipment utilization, design efficient staffing plans, build the optimal distribution network, improve process flows.

Examples of Data Science and AI Applications in Industry

Logistics	Manufacturing	Non-Profits & Govt.	Health Care	Research	Finance
<p>Optimize predictive transportation schedule between warehouse hubs.</p> <p>Optimize the geographic placement of distribution centers and inventory for transportation efficiency and product availability.</p>	<p>Develop a machine vision application for parts quality inspection using robots.</p> <p>Optimize production schedule and inventory to minimize production change-over time and cost.</p>	<p>Develop a program efficacy analysis model to lower juvenile delinquency in late childhood.</p> <p>Build a solution for cost analysis of Medicare payments and provider evaluation.</p>	<p>Analyse post-hospitalization readmission rates and develop early warning model for high risk patients.</p> <p>Develop a prescription regimen compliance model to identify medication under or over use.</p>	<p>Develop a computational fluid dynamics model to optimize metal powder production for quality.</p> <p>Design algorithms for deriving high resolution driving behaviors from a coarse vehicle telemetry.</p>	<p>Develop trading models utilizing machine learning and stochastic differential equations.</p> <p>Build a risk analysis model for capital investment in real estate that integrates disparate data sources.</p>
					

The Lifecycle of Data Science Projects

Are you a company with a developed data science practice and internal team of mathematics, statistics, and AI experts, and you have a repeatable process to develop and roll out projects? Or are you just considering what to do with a trove of data you are collecting but have not yet identified the data's value? Or do you have ideas for interesting models but not the data to support them?

We work with organizations in both early and mature stages of data science deployment. We follow a standard and repeatable process that de-risks each project by splitting it into tractable chunks with an opportunity for early course corrections and adjustments to satisfy the requirements of key stakeholders.

Time



Data Exploration. An important step for companies that are beginning their data science journey is a free exploration of data. The analysis may illuminate opportunities and expose research angles that will multiply the return on investment once the project is underway.



Objective Definition and Validation. This phase centers on defining the business case, developing the workplan that translates the business requirements into data science algorithms and models, then validating that the necessary data and infrastructure exist to succeed.



Prototype. We build a proof of concept models and software to validate that the initial assumption were correct. Although this is not intended to deliver a final product, it is meant to de-risk the project and present the stakeholder with an opportunity for a course correction if necessary.



Minimal Viable Product. The end of this phase culminates in a working model that delivers a focused value aligned with the business goals. Companies deploy the MVP into a curated business process to extract the immediate value and gain knowledge of benefits to the larger business.



Commercialization. The MVP delivers immediate value to the business and its customers within the precise scope defined in the prior stages. Expanding the MVP to serve a wider business magnifies the value for a larger group of stakeholders.



Continuous Improvement. As the business requirements evolve and more data is collected overtime, the working models are adjusted and optimized to reflect the emerging realities. Machine learning systems become smarter and the predictions more precise.

What is Next?

What organizations benefit from Data Science?

- 1 Companies aiming to customize customer experiences or product configuration
- 2 Companies operating in evolving markets with supply and demand shocks.
- 3 Companies requiring extensive planning, scheduling and low fault tolerance in execution
- 4 Companies seeking additional revenue streams within the core or adjacent business segments
- 5 Companies with a large trove of data that has not been fully utilized or understood.

Engagement Flow



During the Feasibility and Design phase we work with your team to determine the probability of technical success by analyzing the business case and the data. Then we solidify the maximum impact use case and design the project flow to support it.

If the probability of technical success meets the required threshold, we focus on the project development. The process involves a short series of steps for validation and accountability: build a rapid proof of concept, develop and deploy the MVP.

Once the MVP is in place, we work with your team to transfer unique knowledge embedded in the MVP, and assist with generalizing the model for application in other aspects of your business.